today:
Measurement of Oxygen: electrochemical or paramagnetic?
SAXON Junkalor: new website launched

**Measurement of Oxygen: electrochemical or paramagnetic?**

Often we got the question what’s the best technology to measure oxygen: electrochemical cell or paramagnetic measurement. Today we describe both technologies, also we give some hints for choice.

In electrochemical cells (short: EC) oxygen will be reduced by a chemical reaction. At this process a current flows proportional to oxygen percentage. But also the cell dissipates by the process, it is necessary to substitute it every 1 ... 2 years.

Oxygen has the property to be magnetic in a magnetic field. This property is used to sink oxygen into a magnetic field. The volume flow rate is proportional to the oxygen percentage. The oxygen is not dissipated by this technology, a closed gas loop is feasible.

However the paramagnetic sensor is as many times more expensive as EC. Following table shows material costs for several years:

![Graph showing material costs for several years](image)
For paramagnetic sensor doesn’t accrue any additional costs, for EC there are charges necessary. However the break even will be reached after about 80 years.

Beside of costs following parameters are essential for choice between electrochemical an paramagnetic measurements:

<table>
<thead>
<tr>
<th>parameter</th>
<th>electrochemical cell</th>
<th>paramagnetic sensor</th>
</tr>
</thead>
<tbody>
<tr>
<td>substitution of cell</td>
<td>about 2 years</td>
<td>never</td>
</tr>
<tr>
<td>calibration cycle</td>
<td>often (because of cell aging)</td>
<td>seldom</td>
</tr>
<tr>
<td>influence on gas</td>
<td>yes (invasive measurement)</td>
<td>no (non-invasive measurement)</td>
</tr>
<tr>
<td>cross sensitivities</td>
<td>possible</td>
<td>none</td>
</tr>
<tr>
<td>kind of gas flow</td>
<td>extractive gas probe without gas feedback</td>
<td>gas feedback possible (e.g. at small reactors)</td>
</tr>
</tbody>
</table>

**New Internet Presentation launched**

These days SAXON Junkalor has refaced and launched it’s internet presentation. What’s new:

- application oriented structure
- fast access to convenient product information
- customer specific configuration reachable with three clicks only

So you have fast access to relevant information, even you don’t know our products. Of course you will find this newsletter at our website too.

You find our presentation at [www.SAXON-Junkalor.de](http://www.SAXON-Junkalor.de).
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